

# **CALIBRATING LASER BEAM POSITION AND SHAPE USING AN IMAGE CAPTURE DEVICE**

## **ABSTRACT OF THE DISCLOSURE**

The present invention provides improved methods and systems for laser beam positioning, shape profile, size profile, drift, and/or deflection calibration using an image capture device, such as a microscope camera, for enhanced calibration accuracy and precision. The methods and systems are particularly suited for iris calibration and hysteresis measurement of a variable diameter aperture. One method for calibrating laser pulses from a laser eye surgery system using an image capture device comprises imaging a known object with an image capture device. A pulsed laser beam is directed onto a calibration surface so as to leave a mark on the calibration surface. The mark on the calibration surface is then imaged with the image capture device. The laser eye surgery system is calibrated by comparing the image of the mark on the calibration surface to the image of the known object.

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